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ABSTRACT

This report summarizes findings from a national survey to gather information about current and future demand for teachers in Canada and to identify underlying policy concerns. The Teacher Demand survey was conducted with a sample of school districts in all provinces and territories and in both official languages. The survey contained 18 questions covering a broad range of issues, beginning with specific examinations of student enrollment and employment trends and ending with general inquiries into policy requirements. Respondents were asked about current teacher requirements and priorities and about teacher attrition and recruitment. There were 136 usable questionnaires, for a response rate of 67.7 percent. Results indicated a trend from a chronic teacher shortage to a perpetual surplus. However, there were still problems recruiting highly qualified individuals to rural and remote areas. There were projected teacher shortages due to the quality of teacher graduates, the match between vacancies and available recruits, the level and pace of student enrollment change, immigration policies, the nature and extent of interprovincial migration, resource allocation policies, teacher opportunities (e.g., early retirement), and teacher turnover rates due, in part, to an aging teacher labor force. Many respondents noted that current government reforms and revisions to teacher education programs are already resulting in a greater balance between supply and demand. Among the priorities identified by school districts, the most frequent response was technology education. (Contains 26 references.) (SM)

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ED 423 220

A report
on the teacher
labour market

Teacher Demand in Canada

University of Toronto
The Ontario Institute for Studies in Education

SB38133

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Teacher Demand in Canada

Principal Researcher
Harold Press

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Foreword

The world economy is changing constantly, driven by profound changes in trade patterns, investment flows and technology. In this environment, *globalization* is not a matter of choice but of survival. The root of global challenges over the next generation will be economic, as commerce among nations becomes more and more integrated.

Changing social and economic conditions, demographic trends, and emerging technologies are all shaping the environment in which schools exist. In recent years, all provinces and territories have introduced efforts to reform their education systems by focusing on quality. As a consequence, there is an increasing need in this country to focus on policies that address the need for a highly qualified competitive teacher labour force—in all areas of specialization and in all regions of the country.

This report grew out of this concern. The principal investigator, Harold Press, is a doctoral candidate at the Ontario Institute for Studies in Education of the University of Toronto. The report is the first stage of a two-part study designed to: (1) gather information about the nature and scope of teacher demand in Canada, and (2) understand the policy implications of that information.

Because of the support of the Atlantic Canada Opportunities Agency, this report is being distributed to provincial and federal governments, universities, school districts that participated in the initial *Teacher Demand* survey, and a sample of undergraduate education students. Additional copies are being made available to others on a cost recovery basis (see back panel).

Stephen Lawton

Department of Theory and Policy Studies in Education

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INTRODUCTION

This report summarizes the findings of a national survey to gather information about the current and future demand for teachers in Canada and to identify and understand the underlying policy concerns.[1] The Teacher Demand survey was conducted with a sample of school districts in all provinces and territories and in both official languages. In light of changing demographic patterns, aging teacher labour forces, emerging technologies, and increasing demands on educators, the issue of the balance of the supply of and demand for educators in Canada is emerging as a matter of concern to governments, school boards, university education faculties, as well as teachers and prospective teachers.

Background

In the past, public attention on education has generally centred on local issues such as school closure, resource allocation and taxation. Increasingly, attention has focused on educational standards, accountability, cutbacks and public confidence. Typically, teacher supply and demand are afforded public attention only during periods of severe teacher shortage. Nonetheless, the problem is not insignificant. Teacher supply and demand are critical policy areas for planning, program funding, and teacher training.[2] Part of the problem has been a lack of research to produce reliable information for policy-makers, practitioners, teachers and prospective teachers, and the general public.

Future teacher supply and demand have been a concern among educators for years (Barro, 1992; Horsman, 1992). The post-war years of the 1950s and 1960s was a period of rapid expansion in education in Canada. The "baby boom" generation created an immediate demand for teachers. During the 1970s, enrolments began to decline but new concerns about the quality of education led to demands for lower class sizes and calls for an expansion of the curriculum to meet new standards and address special needs of students, particularly in such areas as special education, French Immersion, mathematics and science. By the 1980s, however, the expansion had slowed and in some cases even reversed. Policy-makers began voicing concerns about an aging, immobile and expensive teacher workforce (Grambs, 1980). The 1990s has seen a shift away from a discussion of *quantity* to one of *quality*. Barro (1992) summarizes it this way:

> Given the willingness to pay and/or sufficient flexibility about standards, we can always hire enough people—and usually enough nominally qualified people—to fill the classrooms. But whether we can find teachers good enough to produce the educational performance gains the nation so urgently needs or to reach the ambitious national educational goals that high officials have recently proclaimed are quite different matters. In these respects, the adequacy of the teacher supply is very much in question, and the future supply-demand balance is a major policy concern. (p. 129)

Quantity is still an issue, however. In recent years there has been a growing concern in many parts of the developed world about imminent critical teacher shortages. Numerous published reports have highlighted public concerns about potential teacher shortages in countries such as France (Henderson, 1992), Australia ("Teacher shortage looms," 1994), and England (Rafferty, 1992). In the United States national studies have been completed through the National Center for Education Statistics (Boe, 1990; Ancarrow, 1991; Choy, Henke, Alt, Medrich and Bobbitt, 1993; Jabine, 1994) and regional studies have been completed by many state education departments (Bowers, 1991; Barnes, Bass and Wakeford,

1986). In Canada, studies have been focused at the provincial level (Atkinson and Monk, 1986; Alberta Education, 1988; Smith, 1989; Press, 1990; Samson, Sullivan and Uhl, 1991); Horsman, 1992; B.C. Teacher Supply and Demand Committee, 1993; Saskatchewan Teachers' Federation, 1995).

Purpose of this report

The purpose of this report is to examine current data on the demand for teachers in Canada. More specifically, the report is intended to provide: (1) a broad perspective on the nature and scope of teacher demand as delineated in a number of provincial and national reports; and (2) a summary of the findings of the *Teacher Demand* survey of school districts conducted in 1995-96.

This report is part of a two-phase study. The first phase involves the collection and analysis of information about current and future teacher demand conditions and trends in Canada and the dissemination of that information to specific groups, such as governments, universities, school districts and education students — groups that have an expressed interest in, or are affected by, teacher demand information. The second phase involves a follow-up survey designed to identify and examine the policy implications of those conditions and trends. As part of this second phase, a short questionnaire is included with a sample of recipients of this report. The findings of that survey will tell a great deal about the policy needs and requirements of those with an interest in the teacher labour market in Canada.

Who will benefit

Determining the number and type of current and anticipated teaching and administrative positions and whether there will be enough well-trained teachers and administrators to meet the demand are matters of utmost importance to educators, parents, policy makers, and others interested in educational issues (Arnold, Choy and Bobbitt, 1993). There is not always a match between pre-service certification programs offered by teacher training institutions and the curriculum policies identified by governments and implemented by school districts. Demand information can help fill that gap. Access to information about teacher demand conditions can benefit governments involved in developing and implementing policies related to resource allocation, and manpower and financial planning; university education faculties involved in pre-service certification programs for teachers; teacher federations involved in the professional development of teachers; school districts involved in resource deployment; schools involved in the planning and delivery of high quality programs and services to students; and parent groups concerned about the quality of education for their children. Finally, few issues affect education students more than that of access to the profession. The uncertainty of the labour market and the need for career planning information are issues critical to prospective teachers.

Research method

To examine the research questions posed by this study, a multiple-methods approach was utilized. The first approach was exploratory, involving the collection of research materials, and documentary and archival evidence — in Canada and elsewhere. During this stage, interviews with individuals involved in or affected by teacher demand were completed.

The second approach involved the establishment of a national database on teacher demand. The primary vehicle of this database was the *Teacher Demand* survey which was administered to a sample of school districts in Canada. The survey contained 18 questions covering a broad range of issues beginning with specific examinations of student enrolment and employment trends, and ending with general inquiries into policy requirements. Respondents were asked about their current teacher requirements and priorities, and about teacher attrition and recruitment. During this stage, additional school district enrolment and teacher data were collected directly from provincial education departments and ministries and linked with the teacher demand data. This had the dual purpose of allowing for more detailed comparisons and corroborating the reliability of the

teacher demand data.

While the *Teacher Demand* survey was the primary source of data for this study, the third approach involved the collection of additional information using alternative sources. First, several *Teacher Demand* survey respondents were asked to clarify parts of their responses. Second, telephone and e-mail interviews were conducted with a number of school district officials who were asked to illustrate and explain certain conditions for their particular region.

How the survey was conducted

The population for the study comprised all public school districts in Canada. The survey was conducted in both official languages to a sample of approximately one-third of the school districts in Canada. The names and addresses of the school districts were obtained from the 1995 edition of the Canadian Education Association Handbook (*Kies-ki*).

Because of the vast range in sizes of school districts and because districts operate in both official languages, two sampling techniques were employed. First, for provinces with small numbers of school districts or with small sub-populations of French or English school districts, larger samples were drawn. Second, a sampling method that ensures a wide selection of school districts of all sizes was used. Based on a random start and subsequent systematic selection, the Probability Proportion to Size-Systematic method ensures that the probabilities of selection are proportional to size (Satin and Shastry, 1983). The result was a sufficiently large sample size to allow comparison among different regions of the country and by type of school district, but small enough to be manageable, given the depth and intensity of the investigation.

Data collection was completed between November 1995 and March 1996 — with the exception of a one-month hiatus during the school holiday break. During that period a comprehensive follow-up, utilizing regular mail, e-mail, telephones and, where possible, colleagues to serve as local contacts, was employed to ensure an acceptable response rate was achieved. Of the 143 questionnaires that were returned, seven were found to be ineligible due to missing data, resulting in a response rate of 67.7 percent. A profile of the survey coverage, sample yields and response rates by province and by operating language is shown in Table 1.

Reporting the results

The Teacher Demand survey yielded a rich array of data on teacher demand. The analyses in this report included aggregate data (e.g. means and standard errors) that reveal the opinions of the total group, and cross-tabulations that compare sub-group responses. Cross-tabulations were calculated for the five variables: province, region, language, district size and district growth. For each cross-tabulation, the chi-square statistic and measures of the individual significance of the sub-categories within each grouping were calculated. For the purposes of the analyses used in this study, a 95 percent confidence level was used. In addition, verbatim responses were analyzed where they were elicited in the survey process. For example, respondents were asked open-ended questions, such as: "Do you foresee your school district as having an increased need to recruit teachers from other provinces in the future? Why?"

Because there are varied target audiences for this report, in order to make the report more readable to those audiences several limitations had to be placed on reporting. For example, individual statistics reporting the significance of sub-groups are not provided. For the most part, only relationships that were significant at a 95% confidence level or above have been reported. In addition, most results are reported on a regional rather than provincial level. For those readers who are interested in provincial and territorial breakdowns of the data shown in this report, additional tabular information is available on request (see back panel).

Table 1. Survey coverage, sample yields, and response rates.

Province		Total districts	Sample drawn		Sample yield	Response rate
			n	%		
British Columbia		73	22	30.1	18	81.8
Alberta		57	18	31.6	12	66.7
Saskatchewan		92	25	27.2	11	44.0
Manitoba	English	47	12	25.5	7	58.3
	French	4	4	100.0	3	75.0
Ontario	English	126	35	27.8	27	77.1
	French	8	6	75.0	4	66.7
Quebec	English	13	2	15.4	2	100.0
	French	130	40	30.1	26	65.0
New Brunswick	English	12	5	41.7	3	60.0
	French	6	5	83.3	3	60.0
Nova Scotia		21	9	42.8	6	66.7
Prince Edward Island		3	3	100.0	2	66.7
Newfoundland and Labrador		27	11	40.7	10	90.9
Northwest Territories		9	4	44.4	2	50.0
TOTAL		**628**	**201**	**32.0**	**136**	**67.7**

DEMOGRAPHIC TRENDS

Enrolment Trends

Since 1990, student enrolment in Canada has increased by over five percent (1.5 percent annually).[3] However, the extent of school district enrolment changes varied between and within different regions of the country. For comparative purposes, three levels of school district enrolment change were examined: (1) districts with average annual growth greater than 1 percent; (2) districts with average annual decline greater than -1 percent; and (3) districts with average annual enrolments ranging from -1 to +1 percent.

Over one-third of school districts reported average annual enrolment growth of greater than 1 percent, while about one-quarter reported average annual decline of greater than -1 percent. About 40 percent of school districts reported stable enrolments — average annual enrolments ranging from -1 to +1 percent.

There were significant differences in enrolment growth reported by school districts from different regions of the country (see Table 2). For example, of the school districts reporting decline greater than -1 percent annually, almost seventy percent were in the Atlantic region and Quebec. In comparison, 65.9 percent of the school districts reporting growth greater than 1 percent annually were in British Columbia and Ontario.

The projections of student enrolments to 1998 reported by school districts were not substantially different from the current trends (see Figure 1). The Atlantic region is projected to continue to decline at statistically significant rates (about 2 percent annually), while British Columbia is projected to continue to grow (over 2 percent annually). School districts projecting the greatest gains in enrolment generally were in the larger urban centres.

Employment trends

While student enrolments have increased since 1990, the number of teaching positions has remained relatively stable — increasing only 0.03 percent in five years. Over 40 percent of school districts reported declines greater than -1 percent annually in the numbers of teachers, of which over one-third was from the Atlantic region. On the other hand, 20.7 percent reported growth greater than 1 percent annually, of which one-third was from British Columbia.

Over 50 percent of respondents projected the number of teachers in their districts to remain relatively stable. This was particularly evident in the Prairie region where 74.2 percent projected stable labour forces. The most significant teacher declines were projected for the Atlantic region and Ontario, and teacher growth for Quebec and British

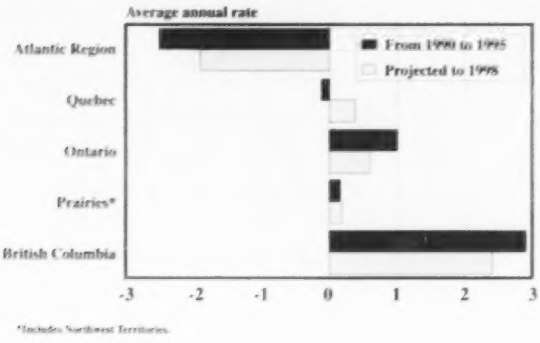
Table 2. Percent of school districts by average annual rate of change in enrolment since 1990 by region (n=131).

Region	Decline > -1%	Stable -1% to +1%	Growth > +1%
Atlantic Region	37.5	23.1	-
Quebec	31.3	19.2	17.0
Ontario	9.4	23.1	34.0
Prairie Region	21.9	28.8	17.0
British Columbia	-	5.8	31.9
TOTAL	**100.0**	**100.0**	**100.0**

NOTE: Totals may not add to 100 percent due to rounding error.
*X^2=42.20, df=8, p<.05

Columbia.

Figure 1. Enrolment trends by region.



*Includes Northwest Territories.

Few changes were projected in the numbers of new teachers required in the next three years. The two exceptions, however, were the Atlantic region where 62.5 percent of school districts projected significant declines in the demand for new teachers, and Quebec where almost half (47.6 percent) of school districts projected increases in the demand for new teachers.

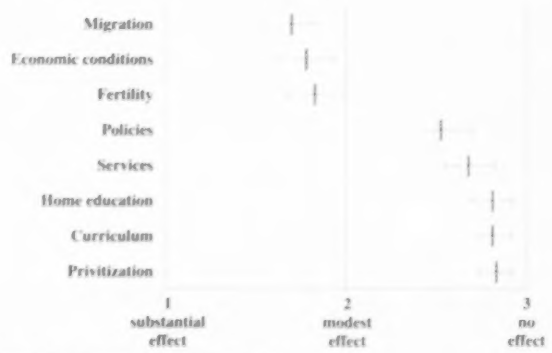
The general aging of teachers is projected to have a significant effect on the number of retirements from the teaching profession. One-half of school districts reported that the number of retiring teachers will grow by at least 1 percent annually in each of the next three years, with 35.1 percent of districts in Quebec and 20 percent of districts in Ontario and British Columbia projecting growth in retirements. Almost half of the school districts in the Prairie region projected no change in the numbers of retiring teachers for the next three years. Less than 10 percent of school districts in the country projected a decline in the numbers of retiring teachers.

Reasons for change

As might be expected, the projected staffing requirements is strongly influenced by changes in student enrolment. For example, over half (53.8 percent) of school districts reported similar growth patterns for both students and teachers, such as a decline in enrolment and a similar decline in the teacher workforce. However, there were exceptions. About one-quarter of the districts that reported either stable or growing enrolments were also projecting a decline in the number of teachers.

Of the eight reasons provided in the survey for these changes, only migration, economic conditions and fertility had significant effects (see Figure 2). Migration had a substantial effect in all regions, but for different reasons depending upon the direction of the migration. In Newfoundland, for example, net migration was outward, while in British Columbia it was inward. Changing economic conditions also had a substantial effect in all regions. Fertility, on the other hand, had a much different effect. For the most part, fertility had a substantial effect only in the Atlantic region and Quebec, while in Ontario and British Columbia the effect was modest.

Figure 2. Reasons for change.



Error bar chart showing 95% confidence intervals.

While none of the other reasons provided in the survey was significant, several are worthy of mention. A number of school districts in Quebec indicated that the privatization of schools was having a modest effect, and several districts from the Prairie region and British Columbia indicated that both home education and new policies such as government cutbacks were having a modest effect.

TEACHER DEMAND

Teacher demand will always exist. In a typical school year, every school district will have vacancies created, although the nature and scope of those vacancies will vary depending upon individual circumstances. Vacancies occur as a result of superannuations, resignations and death, among other reasons. Teacher demand may be defined as the number of teachers needed to fill the available vacancies.[4] For comparative purposes, the term *relative demand* will be used. While aggregate demand refers to the actual number of vacancies, relative demand refers to the number of vacancies in relation to selected demographic or geographic indicators. In this study, comparisons were made by region in the country, level of enrolment change (growth), language of administration, and district size. Error bar charts are used to show the estimated dispersion of the population from which the sample was drawn. They are used here to show 95 percent confidence intervals for the mean for each of the demand indicators.

Demand Conditions

School districts were asked to indicate the capacities, subject areas and skills in which they were experiencing the greatest demand. For each area, respondents were asked to indicate the level of demand — *greater than usual*, *about the same*, or *less than usual* — and then to identify the three areas that, in the next three years, will likely be the most difficult to fill.

Capacities

Capacities refers to that broad category of professionals who work at the school and school district levels, including classroom teachers, social workers, counsellors and administrators among others. Students with special needs, including those who are gifted and talented, require specialized learning opportunities. In order to deal effectively with the needs of these children, special education is recognized as separate from and also linked with general education. Over one-third of school districts reported that they were experiencing greater than usual demand for special education teachers. Demand for special education teachers was highest in British Columbia and the Prairies.

A number of school districts (22.6 percent) reported difficulties in recruiting administrators, particularly individuals to fill the position of school principal. Several respondents indicated that recruiting principals was more of a job satisfaction issue with potential candidates than a supply problem. One Director from Ontario noted: "We have a number of highly qualified teachers who could move into school administration but who won't because of the stress and long hours associated with the job." Demand for administrators was greatest in the Atlantic region.

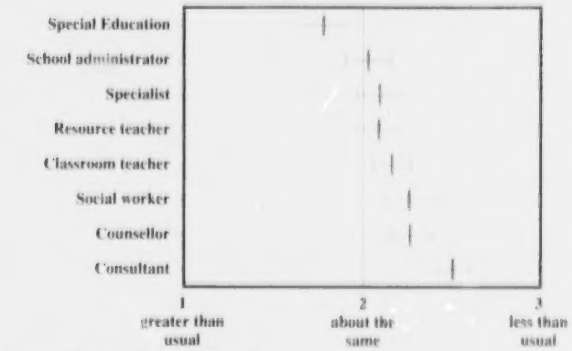
Demand in all other capacity areas has been unchanged in the last few years with over 85 percent of school districts reporting demand for positions in these areas to be either unchanged or less than usual (see Figure 3). While overall demand was less than usual, certain capacities were in demand in specific regions of the country (e.g., resource teachers, counsellors and specialists in British Columbia, classroom teachers in Quebec, and social workers in the Prairies).

Subject areas

While one of the capacity areas includes general classroom teachers, many teachers specialize in subject/language areas, such as mathematics, art, music, French Immersion and physical education. About two-thirds of all school districts reported that they were experiencing

greater than usual demand for technology education teachers.[5] While demand for technology education teachers was evident in all regions, it was particularly high in Ontario and British Columbia. Greater than usual demand was also reported for both science (44.6 percent) and mathematics (39.2 percent). Demand for science and mathematics teachers was greatest in Quebec.

Figure 3. Relative demand by capacity.

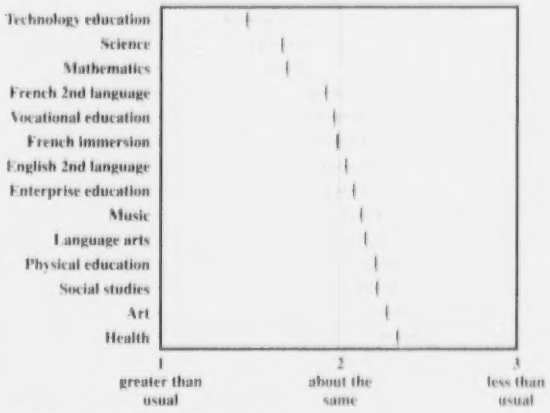


Error bar chart showing 95% confidence intervals.

Other subject areas in which demand was reported as greater than usual by at least 10 percent of school districts, included vocational education (28.7 percent), French Immersion (26.0 percent), English second language (20.4 percent), French second language/core (19.6 percent), and enterprise education (18.6 percent). At the same time, however, over one-quarter of school districts reported that demand in these same areas was less than usual. Several subject areas were in greater than usual demand in certain regions (e.g., French Immersion, French second language, English second language and vocational education in British Columbia, éducation professionnelle, Anglais and Français langue seconde in Quebec, and enterprise education and French second language in Ontario).

Over 90 percent of school districts reported that demand in the remaining subject areas was either the same or less than usual. Demand was lowest in the areas of music, language arts, physical education, social studies, art and health (see Figure 4).

Figure 4. Relative demand by subject.



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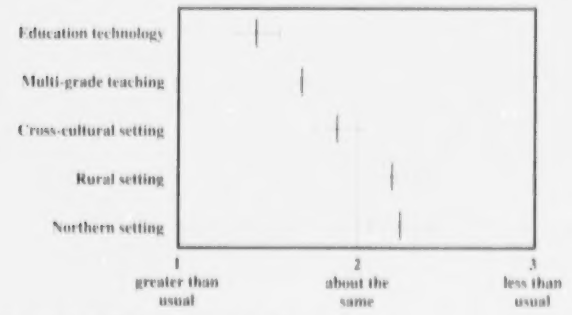
Skills

Regardless of the background, experiences and areas of specialization of teacher education graduates or certified teachers seeking employment or reemployment in the public school system, some general skills are viewed as important — even critical — to certain teaching positions and are actively pursued by some school districts. For example, the ability to seek out, understand and use new and emerging educational technologies — whether one's training is in the area of science education, special education, or music education — is viewed by some employers as a mandatory requirement for all new teachers. The findings of this survey confirm this notion. About two-thirds of all school districts reported that they were experiencing greater than usual demand for teachers having skills in the area of educational technology (see Figure 5). While demand in this skill area was evident in all regions, it was particularly high in the Atlantic region and British Columbia.

Greater than usual demand was also reported for teachers with skills in working in multi-

grade environments (43.0 percent) and for teachers with skills in working in cross-cultural settings (29.3 percent). Demand for teachers for multi-grade environments was significant in all regions of the country, whereas demand for teachers for cross-cultural settings was significant in Quebec, Ontario, Saskatchewan and British Columbia. Most school districts reported that demand for teachers with knowledge about working in rural and northern settings was either unchanged or less than usual.

Figure 5. Relative demand by skill.



Error bar chart showing 95% confidence intervals.

School district priorities

As part of the survey, school districts were provided the opportunity to identify specific capacities that, over the next three years, they anticipate having the most difficulty in filling. For example, two school districts indicated that they were having difficulty recruiting First Nation teachers, particularly for teaching in aboriginal languages, and that this was a priority for them. Others took the time to identify particular sciences at the intermediate and secondary levels for which they were having trouble recruiting qualified teachers. Still others identified staffing difficulties unique to their particular school district, such as speech pathologists and teachers trained in the area of deaf education.

Among the priorities identified by school districts, the most frequent response (57) was technology education. Others areas that were identified in significant numbers include science, mathematics, special education and vocational education. Recruiting school administrators — primarily principals — was also identified by 10 districts as their number one priority. Language instruction, including French, French second language, French Immersion, Anglais, Anglais langue seconde, as well as Cree, Spanish and other languages, was identified as a priority by over 50 school districts. A summary of the school district priorities is presented in Table 3.

Table 3. School district choices by order of priority.

Subject/Capacity/Skill	Number of School Districts			
	Priority 1	Priority 2	Priority 3	TOTAL
Technology education[1]	22	23	12	57
Sciences[2]	14	23	12	49
Mathematics	13	13	9	35
Special education/adaptation scolaire	12	8	4	24
French Immersion	5	5	4	14
Vocational education/formation professionelle	8	2	3	13
School administration	10	1	1	12
French	5	2	4	11
Anglais langue seconde	3	3	5	11
French second language	5	1	1	7
Multi-grade teaching	1	2	4	7
Classroom teacher	4	2	-	6
Counsellor	2	1	2	5
Resource teacher	1	3	1	5
Other languages[3]	1	2	1	4
Enterprise education	-	2	2	4
Specialist	3	-	-	3
Music	2	1	-	3
Anglais	1	1	1	3
Classroom teacher (aboriginal language)	2	-	-	2
Educational technology	2	-	-	2
Business education	1	-	1	2
Religious education	-	2	-	2
Career technology	1	-	-	1
Fine arts	1	-	-	1
Northern setting	-	1	-	1
Deaf education	-	-	1	1
Speech pathology	-	-	1	1

[1]Includes information technology and communications technology. [2]When asked to clarify their priorities in the area of science, most respondents indicated that their needs were primarily at the secondary level, with specialization in the physical sciences. [3]Languages specifically identified include Spanish and Cree.

SHORTAGE OR SURPLUS

While this study made no attempt to measure teacher supply, it did seek answers to questions about the quality of supply and the link between supply and demand. Supply and demand should not be viewed as separate entities; one is an adjunct to the other. At any point in time, in any geographic region, or in any area of specialization, imbalances can occur. A positive imbalance (surplus) occurs when the supply of teachers exceeds the demand; a negative imbalance (shortage) occurs when the supply of teachers falls short of required demand. This section explores the match between existing demand and active supply, issues surrounding teacher recruitment, and the question of whether there is an existing or potential teacher shortage.

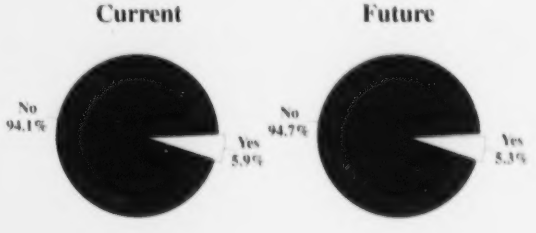
Match between vacancies and candidates

Most respondents (84.6 percent) indicated that the match between the types of vacancies in their districts and the qualifications of candidates seeking to fill them was adequate for their needs. Most indicated that the match was generally adequate but weak in specific areas, particularly senior high science and mathematics, technology education and special education. Several respondents who did not think the match was adequate did offer some explanations. One Directeur général from Quebec said that while most candidates were strong in their respective areas of specialization, many had weak classroom management skills. Another suggested that not all teachers have training to provide inclusive practices.

Recruitment

Most school districts reported that they are recruiting very few teachers from other provinces. Furthermore, most reported that they did not perceive the need to recruit from other provinces in the future (see Figure 6). However, there was a significant exception. One-quarter of school districts in British Columbia reported that they were actively recruiting teachers from other provinces and 30.0 percent reported that they see an increased need to recruit teachers from other provinces in the future.

Figure 6. Greater need to recruit teachers from other provinces?



When asked why there was no need to recruit out-of-province teachers, most respondents were unreserved in their explanations. Some comments included: "We receive 1,000 applications a year from within the province" (Ontario), "There is already an adequate supply of teachers here and we are reducing staff" (Ontario), "We have an over abundance of applicants" (Manitoba), "We don't recruit outside the province, we have a long list of qualified substitutes" (Quebec), "Large numbers of highly qualified teachers in most subject areas are presently available in Saskatchewan," and "There is a reduction in southern recruitment of teachers" (Northwest Territories). Of those respondents from British Columbia who indicated that they were recruiting out-of-province

teachers, most were quite specific in their needs. Responses included: "French Immersion," "special education," and "only in specialized areas."

For a number of school districts, recruiting teachers is becoming more time-consuming (29.3 percent) and costly (19.4 percent). Among the reasons provided by respondents for the additional resources required in filling vacancies include: larger numbers of highly qualified applicants; more redundancies due to government cutbacks; more retirements due to the skewed age structure of the labour force; rising advertising costs; more comprehensive screening processes such as written evaluations, role playing and improvisation; and more restrictions with respect to collective agreements and call-back lists.

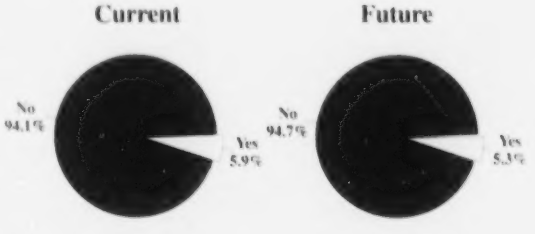
Shortages and surpluses

Whether surpluses or shortages of teachers exist is dependent on a number of conditions, not the least of which is the nature and scope of both supply and demand. During conditions marking a general surplus of teachers, for example, there may be shortages of qualified teachers in certain program areas, in certain skill areas, in certain geographic locations, or in certain types of schools. The trick is in matching the skills, qualifications, experiences, ambitions and expectations of employees (supply) with the mission, goals, objectives and requirements of employers (demand). When the match is close, supply and demand are viewed as being in balance.

While it is difficult for university education faculties to accurately predict demand conditions, nonetheless, it is important for faculties to collect and analyze teacher labour market information and develop policies and strategies that are responsive to the needs of their students as well as the needs of school districts and other potential employers. That is not to say that faculties should be bound by demand conditions in their province alone, but that they should be aware of and responsive to the strategic issues affecting their mandates and mission.

Of the 136 school districts responding to the survey, 98.5 percent reported that they did not currently have a teacher shortage and 92.4 percent reported that they did not expect to have a teacher shortage in the next five years (see Figure 7). School districts from all regions of the country reported some degree of surpluses of teachers. Several respondents from Ontario commented on the *social contract* and other government policies as the major cause of a general reduction in teacher demand. One director from Ontario stated: "There is a great back log of teachers waiting to be hired because various budget reductions have lowered our need to replace retiring teachers." Another, from a Francophone district, reported major layoffs of teachers following the *social contract*.

Figure 7. Teacher shortage?



Of the two districts experiencing shortages, one was in an area of enrolment growth and reported that demand was expected to increase, while the other reported that it was a supply problem for several specialty areas. A number of school districts, particularly from British Columbia, did report shortages in certain fields. However, it would be unwise to conclude that there is, or will be in the future, a teacher shortage in British Columbia. Said one Superintendent from British Columbia, "There is a small shortage only in certain specialties and subjects." Another summed up the issue this way: "Any shortage is about quality. We have an abundance of applicants, even for specialty areas, but we have to maintain a very aggressive recruiting program to

get high quality teachers."

Strategies

Many respondents noted that current reforms being introduced by governments and revisions to teacher education programs being introduced by universities are already resulting in a greater balance between teacher supply and demand. Many strategies for preventing regional and program imbalances were offered by respondents. Their responses are summarized in the following general strategies:

- create meaningful links between teacher education institutions and school districts;
- broaden the technology focus of teacher education institutions to ensure that all new teachers, regardless of their area of specialization have a solid understanding of technology, an awareness of a range of options, and the skills and strategies to be able to derive technical solutions;
- introduce rewards for high performing teachers;
- improve the image and profile of teaching;
- broaden and enhance teacher education programs for students of First Nation ancestry;
- provide incentives for young people to choose high demand areas such as technology education, mathematics, science and languages;
- provide incentives for highly qualified graduates to teach in rural and isolated regions of the country;
- place more emphasis on structured internship programs;
- enhance after-degree programs;
- adopt an equitable interprovincial arrangement for the transfer of pension credit;
- provide better and more timely data on where and in what educational areas the opportunities are for young people; and
- create a national discussion of the issues surrounding teacher mobility.

CONCLUSIONS

One of the more significant outcomes of this study has been its focus on quality and accountability. One of the conclusions is that it is critical that there be an adequate match between the curricula offered in teacher education institutions and the emerging needs of school districts and of students attempting to gain access to today's highly competitive labour market. While the study examines teacher demand from a quantitative perspective, it is no less important that the broader issues of quality in teaching be understood as well. In other words, is the quality of the labour supply, such as recent graduates from teacher education programs, adequate to meet the demands of today's schools? What will be the impact of educational and fiscal reform initiatives currently underway in all regions of the country? How will schools and school districts cope with competing demands and uncertain conditions, such as the need to introduce new technologies against demands for reduced public spending? How can university education faculties be sensitive and respond appropriately to the broader economic and social policies which give direction and substance to education globally? Finally, will an increased emphasis on quality in teacher education — requiring higher input costs (training) — contribute to a potential teacher shortage?

One of the most dramatic features of change in the education system in recent years has been the swing from a chronic shortage to a perceptual surplus. Most school districts will have the benefit of a general teacher surplus — at least until the end of this century. Opportunities will be greatest for those who carefully try and match their skills, qualifications and interests with the needs of school districts. On the other hand, all school districts in Canada will continue to recruit and hire teachers. Because of social, economic and demographic conditions and individual preferences and expectations, there will always be opportunities for teachers and for new education graduates.

While the existence of a general surplus of teachers may benefit school districts generally, it affords an opportunity for teacher education institutions, school districts and provincial governments to examine their education policies, particularly those with respect to teaching and learning, technology application, and the nature of schooling. Frequently, public policy becomes a three-way process with one developing the policy (government); another training the workers (universities); and another implementing the program (school boards). One Director provided an example to illustrate how fragmented the structure is: the Ministry of Education responds to public concerns about the lack of access to computers by children in schools today and develops a policy on the use of computers in schools; the Faculty of Education responds to the same public concerns and develops courses about the use of technology; and school boards are left with teachers who know little about computers or what they can do in the classroom. A number of respondents felt that the current process is antiquated and self-serving, and that *meaningful links* between the three are required.

A general surplus of teachers in Canada does not mean that some school districts will not face teacher shortages of one form or another in the near future. The causes of these teacher shortages will be a combination of factors: the quality of teacher graduates; the match between vacancies and available recruits; the level and pace of student enrolment change; immigration policies; the nature and extent of interprovincial migration; resource allocation policies; and teacher turnover rates due, in part, to an aging teacher labour force; and increased opportunities for teachers, including early retirement. One respondent from British Columbia noted the connection between demand and the aging teacher labour

force: "Ten percent of our teaching force will retire in the next 5-10 years which may result in shortages in specialized areas."

A number of respondents spoke directly to the difficulty in recruiting highly qualified individuals to rural and remote areas. The dilemma for some districts is not a lack of qualified applicants, but insufficient resources to hire the kinds of specialists required to meet the needs of students. A small multi-grade school, for example, may require a mathematics specialist, yet to meet the growing demands of that school — which are no less than the demands of larger urban schools — a generalist may be hired. The result is a need for more innovative hiring practices, resource allocation and deployment strategies, and professional development activities. While the likelihood of a general teacher shortage in rural and isolated schools is remote, the likelihood of a skill shortage for these schools is substantial.

The practice of using advanced technologies to provide learning opportunities for students in rural and isolated schools is increasing, particularly in specialized curriculum areas. Developments in satellite technology, fibre optics, digital compression, and other forms of distance telecommunications hold considerable promise for helping rural schools overcome many of the disadvantages associated with remoteness and geographical isolation. Training in the area of *educational technology* is particularly important for all new teachers hired to teach in rural or isolated schools.

There is a growing recognition that the next generation of policy research must focus on models which accommodate social, economic and educational issues and which extend beyond provincial and national boundaries. The Economic Council of Canada (1990) contended that the nature and scope of the labour market — driven by profound changes in trade patterns, investment flows and technology — fuels the demand for an increasingly well-educated and skilled work force. The purpose of this report is to provide at least part of the background necessary for understanding the policy implications of teacher demand.

ENDNOTES

1. The term teacher is used throughout this report to include all educators. While educator is perhaps the more correct term, traditionally teacher has been used to identify all certificated school and school district personnel. Where a reference to other non-classroom personnel—such as school administrators and speech pathologists—is required, they will be identified specifically.

2. While the focus of this research is the current and future demand for teachers in Canada, the relationship between the demand for and supply of teachers is addressed. For example, some supply issues are connected with, and can have a profound effect upon, teacher demand, such as, the match between the vacancies (demand) and the candidates available to fill those vacancies (supply); the recruitment of new teachers; and the existence of teacher shortages in certain areas.

3. See, Statistics Canada *Advance statistics of Education* (81-220), Ottawa, ON: Industry, Science and Technology [various years].

4. This study was limited to an examination of the demand for teachers within the public school systems in Canada, although it is recognized that opportunities for trained teachers exist in many other fields. See Wolfe (1980) for a detailed discussion of the labour market experiences of graduates from teacher training institutions in Ontario.

5. For the purposes of this study, a distinction is made between *technology education*, used here to refer to a school subject designed to develop technological literacy through design and technological problem solving, and *educational technology*, used here to refer to the use of technological tools to create optimum teaching/learning environments. Educational technology has the same role in technology education that it has in mathematics, science, social studies and any other subject.

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